

In the Claims

- 1 1. (original) A method for modeling a graphics object, comprising:
 - 2 providing a model of the graphics object;
 - 3 generating a first adaptively sampled distance field for the model;
 - 4 constructing a topological hint;
 - 5 generating a second adaptively sampled distance field for the
 - 6 topological hint;
 - 7 sampling first locations of the second adaptively sampled distance
 - 8 field to determine a corresponding topological feature for each location;
 - 9 determining second locations in the first adaptively sampled distance
 - 10 field from the corresponding topological features of the second adaptively
 - 11 sampled distance field; and
 - 12 sampling the first adaptively sampled distance field at the second
 - 13 locations to determine a distance value for each of the second locations to
 - 14 model the graphics object according to the topological hint.
- 1 2. (original) The method of claim 1 wherein the topological features are
- 2 distance values of the second adaptively sampled distance field, further
- 3 comprising:
 - 4 generating a third adaptively sampled distance field from the distance
 - 5 values at each second location.
- 1 3. (original) The method of claim 2 further comprising:
 - 2 rendering the third adaptively sampled distance field.

- 1 4. (original) The method of claim 1 wherein the topological hint is
- 2 constructed from graphics primitives.

- 1 5. (original) The method of claim 4 wherein the graphical primitive has a
- 2 corresponding implicit function, and the second adaptively sample distance
- 3 field is generated from the implicit function.

- 1 6. (original) The method of claim 1 wherein the topological hint is
- 2 constructed from a plurality of graphical primitives, and further comprising:
 - 3 generating a primitive adaptively sampled distance field for each
 - 4 graphics primitive;
 - 5 combining the plurality of primitive adaptively sampled distance
 - 6 fields to generate the second adaptively sampled distance field.

- 1 7. (previously presented) The method of claim 6 wherein the combining
- 2 includes (CSG) operations.

- 1 8. (original) The method of claim 1 wherein the topological features are
- 2 distance values of the second adaptively sampled distance field, and the
- 3 distance values of the first and second adaptively sampled distance fields are
- 4 combined.

- 1 9. (currently amended) The method of ~~claim~~ claims 1, 2, 5, or 6 wherein the
- 2 generating comprises defining a candidate cell of the adaptively sampled
- 3 distance field, determining and storing distance values of the candidate cell
- 4 in a bounded distance tree, recursively subdividing the candidate cell into
- 5 subdivided cells of the adaptively sampled distance field while determining

6 and storing corresponding distance values of the subdivided cells in the
7 bounded distance tree until a termination condition is reached, and
8 appending the distance values to the corresponding cells to generate the
9 adaptively sampled distance field of the object.